but it does not appear to be very widely known, and the component parts are always at hand and are very conveniently carried and applied by the patient."

I believe some surgeons teach this method of controlling epistaxis, but why do we not see it used? As a physician I would ask the surgeons if the balloon cannot replace nasal packing in *all* cases of severe epistaxis.—I am, etc.,

London, W.1. N. S. PLUMMER.

Therapeutic Uses of Vitamin E

SIR,—The leading article on "The Therapeutic Uses of Vitamin E" (December 20, 1952, p. 1345) certainly calls for comment by us, the proponents of the use of α-tocopherol in cardiovascular disease.

Such an article might conceivably have been written in 1948 or 1949. However, the picture has changed so rapidly since that time that your leading article now simply does not reflect the findings of investigators in this field. This is best illustrated, perhaps, by the current issue of our medical journal, the *Summary*, which contains the abstracts of 122 reports which have appeared in the medical literature supporting our original contentions. It seems that α-tocopherol shares with Christianity both its beneficence and the observation that those who say it has failed have rarely tried it. Since the American Aristotles first condemned it, too many doctors have dropped a pebble from their own towers to make that condemnation stick.

Briefly, our current *Summary* records that 17 reports have supported us in the use of α-tocopherol for the menopause; 5 in its use for nephritis; 6 for kraurosis vulvae; 4 for capillary permeability; 4 for purpura; 5 for vascular dilatation; 11 for Buerger's disease; 10 for vascular sclerosis; 15 for thrombosis; 3 for muscular power; 20 for indolent ulcers; 14 for diabetes; 4 for Roentgen tissue damage; 4 for incipient gangrene; 2 for wound healing. Finally, 46 reports have supported us in the use of α-tocopherol for heart disease.

It is difficult to believe that all these investigators have duplicated an error. Certainly it is cavalier to dismiss such work in one paragraph. Fortunately, our forthcoming book should help to keep the record straight and we will recommend it to your perusal. Also, as Auden, one of your own poets, has said:

> "One notices, if one will trust one's eyes,
> The shadow cast by language upon truth."

—We are, etc.,

WILFRID E. SHUTE.
EVAN V. SHUTE.

London, Canada.

Control of Bone Growth

SIR,—To the methods of controlling bone length mentioned in your annotation (October 18, 1952, p. 872) I wish to add another—namely, control by radium action on the epiphysial line. This method was employed originally[1] with the object of producing bone curvatures. Thus genu valgum was produced in rabbits[2] by placing radium on the outer side of the knee and genu varum by placing it on the inner side. Right-convex scoliosis was produced in goats and rabbits by placing radium on the left side of one or more vertebrae.

Though the purpose of these experiments was to obtain a circumscribed damage of the epiphysial line, a very marked shortening of the whole radiated bones developed in addition to the anticipated deformities. In one rabbit which had a needle containing 5 mg. of radium inserted for three days on the lateral side of the knee, the femur showed a shortening by 18 mm. after six and a half months, and the tibia of the same side a shortening by 3 mm. compared with the non-treated control side (88 mm. and 91 mm. respectively). The degree of retardation of growth was in direct proportion to the dosage of radiation applied. There was a marked difference in the sensitivity of the epiphysial cartilage of different bones in the same animal. The distal end of the femur appeared to be far more sensitive than the proximal end of the tibia, in spite of the fact that both are the growing ends of the two bones concerned.

These results suggest that the radium method could easily be modified so as to produce a complete arrest of bone growth without deformity. In that case the whole epiphysis line would have to be equally exposed to radiation. It was shown by histological examination that the enchondral ossification comes to a complete standstill if the necessary dose of radiation is applied. It may be of advantage to combine the traumatizing effect of pegging with the damaging effect of radium by inserting radium needles deep into the epiphysis line. No fear need be entertained that the radium may have an ill effect on tissues other than the epiphysial cartilage, since, according to the law of Bergonié and Tribondeau, tissues with the greatest productive activity are the most susceptible to gamma radiation. Thus gamma rays have an elective effect on the epiphysial cartilage of growing bones.

The radium method has the advantage over other methods that with experience an exact control of bone damage can be achieved by varying the time of exposure and quantity of radium. It should be easy to establish the radium dosage necessary to destroy the germinating power of an epiphysial cartilage, just as it is possible to calculate the erythema dose of the skin. The dosage employed in my experiments may be an indication of the dosage required in human bones, but could not be accepted without further comparative study. Radiologists may find that deep *x* rays will be more practicable for arresting bone growth than radium. It is known that when bone tumours or tuberculosis in juveniles were treated by *x* rays an arrest of bone growth was inadvertently produced. It is up to the radiotherapists to take their choice and work out the details of either of these methods. My present purpose is only to propose practical application of an idea the foundations of which were laid in my earlier experiments.—I am, etc.,

Hong Kong. D. ENGEL.

REFERENCES

[1] Engel, D. (1939). *Amer. J. Roentgenol.*, **42**, 217.
[2] —— (1938). *Brit. J. Radiol.*, n.s. **11**, 779.

Home Nursing and First-aid Lessons for Schoolgirls

SIR,—The raising of the school-leaving age has retained within the education field a final-year group of girls who are maturing mentally as well as physically. This is a time when it is possible to interest them in subjects with a more adult aspect. I suggest that one lesson period a week in the last year of school should be devoted to training in home nursing and first aid. This would provide some 40 sessions of training. This instruction would be an excellent long-term investment for the community. To adopt such a policy nationally would mean that in a few years every shop and office, hotel and café had staff able to give elementary assistance. It would also mean that within a reasonable time every young mother would have a basic knowledge of home nursing which could be of value in the care of her family. A widespread knowledge of home nursing and first aid would relieve pressure on the general practitioner and the district nurse and others and would be to the benefit of all.—I am, etc.,

Brighton. W. S. PARKER.

Treatment of Acute Malaria with Pyrimethamine

SIR,—The paper by Dr. T. Wilson and Dr. J. F. B. Edeson which appears in your issue of January 31 (p. 253) was, I believe, written before Robertson *et al.*[1] had produced from Nairobi conclusive proof that a proguanil-resistant strain of *Plasmodium falciparum* from Malaya was also resistant to pyrimethamine ("daraprim"). It is well known that different "geographical" strains of the malaria parasite vary in their susceptibility to different antimalarial drugs. Nevertheless, it would be a very odd coincidence if there were in the Malaya strains two potential causes for these pyrimethamine "failures"—one, the proguanil cross-resistance proved by Robertson *et al.*, and the other some natural form of resistance unconnected with proguanil-resistance.